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World Tuberculosis Day 2020: It's Time

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The 24th of March was chosen as World Tuberculosis Day to raise public awareness about the disease. It is also the day Robert Koch announced his discovery of the Mycobacterium bacillus as the cause of tuberculosis (TB) in 1882. Latent tuberculosis infection (LTBI) is a state of persistent immune response to stimulation by *Mycobacterium tuberculosis* antigens with no evidence of clinically manifest active disease. The incidence of tuberculosis disease in Ireland is now low at 6.6/100,000 population.[1] The World Health Organisation (WHO) has set the goal of a 90% reduction in global TB incidence by 2035 when compared to 2015.[2] Unless improvements in TB prevention and control are made in Ireland it is unlikely we will achieve this target. The WHO End TB Strategy states that the systematic identification and management of LTBI in groups of people at high risk of reactivation is an essential part of TB elimination in low-incidence countries.[2] The *Health Protection Surveillance Centre (HPSC) Guidelines for the Prevention and Control of TB 2010* recommend the screening of people living with HIV, persons on immunosuppressive therapy, healthcare workers, people who use intravenous drugs, people who are homeless and people from countries with a high incidence of TB.[3]

Which target risk groups to prioritize for the programmatic management of LTBI in Ireland depends on the importance of the risk group in our national TB epidemiology and the size of the at-risk population. There exists no registry for LTBI screening in Ireland nor is their centralised data collection on diagnosis and treatment. There is no reported data on the number of TB cases on anti-TNF α treatment in Ireland. Anti-TNF α treatments are frequently used in the management of inflammatory conditions but it is unknown exactly how many patients are being treated with these in Ireland. Based on published studies we can estimate the prevalence of LTBI in this cohort to be 5-10% and the uptake of LTBI treatment by these patients tends to be high.[4] In Ireland, there is an overlap of some target risk groups. The incidence of HIV in Ireland in 2018 was 11/100,000 population.[5] Seventy per cent of those notified as having HIV in 2018 were from Latin America or Sub-Saharan Africa, areas where TB tends to be highly prevalent.[5] In 2018 only 131/315 (42%) of TB notifications had their HIV status reported, of which 13/131 (10%) were positive.[1] One centre in Ireland reported the prevalence of LTBI in a cohort of patients with HIV attending their outpatient clinic as being 18% when screened using IGRA.[6] It is not known what proportion of HIV patients in Ireland are screened for LTBI or what treatment completion rates in those with HIV and LTBI are. There is also an overlap of target risk groups in healthcare workers and migrants from high incidence TB countries. Of all new entrants into the professional nursing register between 2000-2010 35% were non-European Union (EU) migrants.[7] In 2015, the top 3 countries new entrant nurses trained in were India, Nigeria and the Philippines. Similarly, for doctors retaining their registration on the 2015 medical register, 38% received their medical degree outside of Ireland, the top 3 non-EU countries being Pakistan, Sudan and Nigeria.[8] The prevalence of LBTI among healthcare workers in Ireland is likely high with one study reporting 32% of a large cohort of new entrant healthcare workers having LTBI when screened using the tuberculin skin test.[9] The uptake of LTBI treatment among healthcare workers arriving in Ireland has been reported to be low in one study with 75% of those offered treatment declining the offer.[10] Reactivation of latent TB as opposed to the acquisition of TB in Ireland likely accounts for a significant proportion of TB cases among foreign-born individuals. In 2018, 138/315 (43.8%) TB notifications to the HPSC were in people born outside of Ireland.[1] Of these, 63/138 (46%) were born in Asia and 32/138 (23%) were born in Africa. The challenge in migrants to Ireland from high incidence TB countries is linking them into care. In England, a programme for the systematic identification and screening of migrants from pre-defined high-risk migrants based on country of origin is in place. It involves people from high incidence TB countries in the catchment area of a primary care centre being invited to attend for screening with the referral of LTBI cases identified to secondary care. Such an arrangement would require significant resources to enable the identification, invitation,

screening and referral of cases identified in this cohort. Psychosocial aspects which can act as barriers to seeking healthcare among migrants would need to be considered. These can include TB-related stigma, self-chosen social isolation, stress, depression, perceived discrimination and fear of deportation. Ethically there should not be any actual or perceived coercion among target risk groups to undergo screening as part of the programmatic management of LTBI. In people who are homeless, those in prisons and people who use intravenous drugs in Ireland little is known about the prevalence of LTBI or how effectively they are being screened. Further efforts should be made to evaluate the risk and management of LTBI in these vulnerable population groups.

Improvements in the programmatic management of LTBI in Ireland will require input from multiple stakeholders including primary and secondary care services, healthcare managers, public health, occupational health, patient representations, civic society groups and non-governmental organisations. Assessments of the cost-effectiveness of LTBI screening of target groups in the context of our LTBI epidemiology and healthcare service should be performed. Training on the benefits of LTBI treatment, the risks of hepatoxicity and the implementation of national guidelines should be provided to healthcare workers. Standardised tools for the local audit of LTBI management in Ireland should be developed. Processes should be established which allow the reporting of LTBI screening data to a central agency. This could identify where gaps in the cascade from LTBI screening to treatment completion exist. As we approach World TB Day 2020 it may be time to consider how we can implement such changes to meet WHO End TB targets.

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